(No Model.)

T. BURKHARD.

STEAM KETTLE.

No. 458,299. Patented Aug. 25, 1891

Fig. 1.

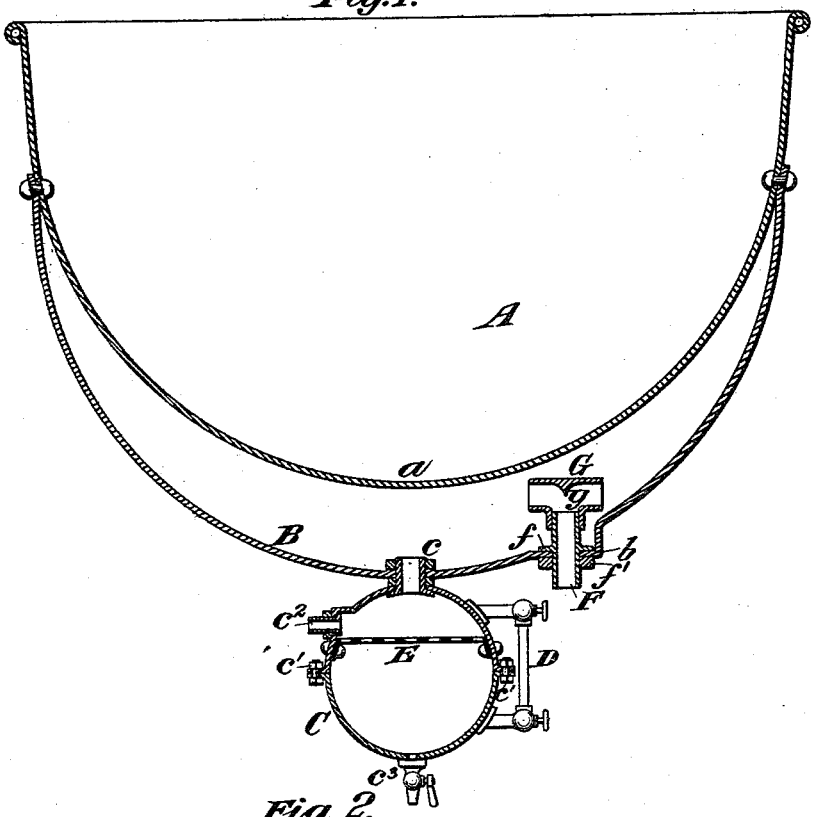
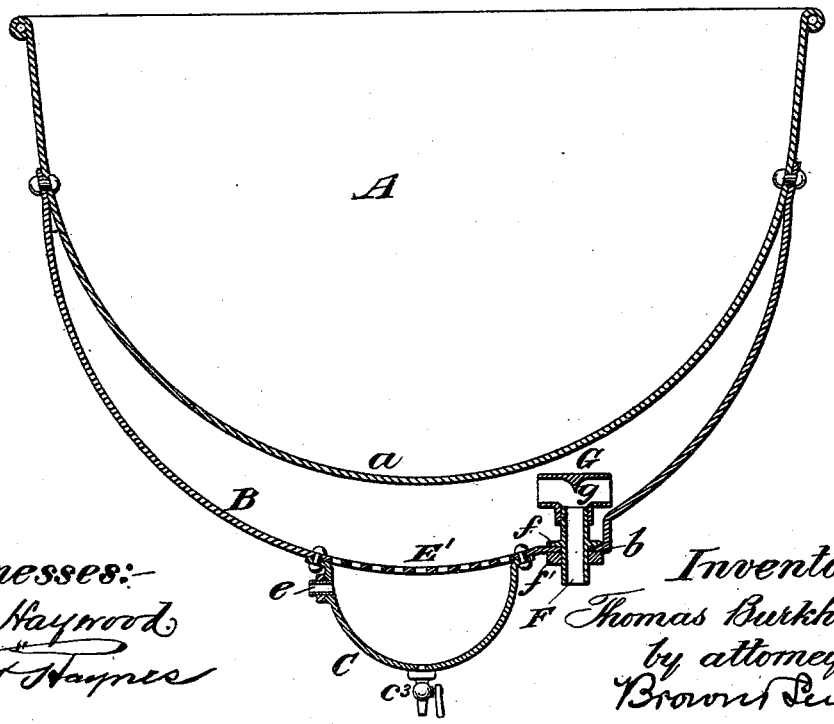


Fig. 2.



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THOMAS BURKHARD, OF BROOKLYN, NEW YORK.

STEAM-KETTLE.

SPECIFICATION forming part of Letters Patent No. 458,299, dated August 25, 1891.

Application filed March 26, 1891. Serial No. 386,448. (No model.)

To all whom it may concern:

Be it known that I, THOMAS BURKHARD, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Steam-Kettles, of which the following is a specification.

My invention relates to an improvement in steam-kettles, and more particularly to the means for admitting the steam into and discharging it from the space between the bottom of the kettle and the false bottom.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a vertical section of a kettle, showing the steam inlet and discharge devices in connection therewith; and Fig. 2 is a similar view showing a modified form of the exhaust-well.

A represents the kettle provided with the bottom *a*, and B represents the false bottom fixed to the kettle and spaced from the bottom *a*, so as to form a steam-chamber intermediate between the two. The false bottom B is provided at its lowest point with an opening, in which the neck *c* of a well C is secured, the well itself depending from the false bottom. The well C, as shown in Fig. 1, is of globular form and is made in half-sections, which are united by means of bolts or rivets *c'*, extending through their adjacent flanges. At its upper portion the well is provided with an opening c^2 for the escape of the exhaust-steam, and at its bottom is provided with a waste-cock c^3 for the purpose of discharging any water of condensation which may accumulate in the bottom of the well.

The height of water in the well is indicated by means of a gage D, in communication with the upper and lower portions of the well.

At a point slightly below the exhaust-steam opening c^2 I locate a perforated diaphragm E across the well, which serves to deflect the steam toward the opening c^2 and at the same time allow the water from the condensation of the steam to escape through it into the lower portion of the well. By this means I am enabled to obtain a more rapid exhaust and less condensation of the exhaust-steam, thereby keeping a more rapid circulation of the live hot steam in contact with the bottom of the kettle.

The false bottom B is provided at one side of the lowermost point with a flattened portion *b*, through which is an opening to receive the steam-inlet pipe F. The pipe F is provided with a flange or collar *f*, adapted to rest in contact with the upper or inner side of the false bottom B, and its end upon the outside of the bottom may be screw-threaded and provided with a nut *f'*, adapted to screw thereon into engagement with the lower or outer side of the false bottom, and thereby clamp the pipe F firmly to the bottom.

The end of the steam-inlet pipe F within the space between the bottom of the kettle and the false bottom is provided with a cross-head G, which may be either a T-head having openings in opposite directions or an X-head. The said cross-head G is provided with a wedge-shaped guide *g*, which depends from its top inner wall at a point opposite the end of the steam-inlet pipe F for the purpose of diverting the steam more or less to the right and left, as may be desired. When the guide *g* is located centrally opposite the end of the inlet-pipe F, it will tend to throw the steam equally in opposite directions, and by moving it to one side of the center it will have a tendency to throw more in one direction than in the other.

In the modified form shown in Fig. 2 the perforated diaphragm E', which corresponds to the diaphragm E in Fig. 1, is a part of the false bottom B, and the steam-outlet *e*, corresponding to the outlet c^2, is located below it. The well C' is in this case semi-globular and is secured directly to the false bottom B at points around the margin of the perforated portion E'. In this case the perforated diaphragm is provided with larger perforations for the escape of the exhaust-steam, and also for any water as the result of condensed steam, and because of its extended area forms a ready escape for the exhaust-steam, while at the same time distributing it, so as to prevent a well-defined current tending to a single point.

What I claim is—

1. The combination, with the kettle and its

false bottom, of a well depending from the false bottom and provided with a steam-exhaust opening and a water-discharge opening, and a steam-inlet pipe extending through the false bottom, substantially as set forth.

2. The combination, with the kettle and its false bottom, of a well depending from the false bottom and provided with an exhaust-steam opening and a water-discharge opening, a perforated diaphragm interposed between the steam-space around the bottom of the kettle and the water-discharge opening, and a steam-inlet pipe extending through the false bottom, substantially as set forth.

3. The combination, with the kettle and its false bottom, of the globular well depending from the false bottom and provided at its upper portion with a steam-exhaust opening and at its bottom with a water-discharge opening, a perforated diaphragm extending across the interior of the well between the steam-discharge opening and the water-discharge opening, and a steam-inlet pipe extending through the false bottom, substantially as set forth.

4. The combination, with the kettle and its false bottom, of a well depending from the false bottom and provided with steam and water discharge openings, a gage in connection with the well to determine the height of water therein, and a steam-inlet pipe extending through the false bottom, substantially as set forth.

5. The combination, with the kettle and its false bottom and means for discharging the exhaust-steam and water from the false bottom, of a steam-inlet pipe provided with a flange adapted to fit the inner face of the false bottom and with a clamping-nut adapted to screw thereon into engagement with the outer face of the bottom, and a cross-head fitted to the inner end of the steam-inlet pipe and provided with a guide to distribute the steam laterally as desired, substantially as set forth.

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